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future demands as may be made by the military and naval forces upon the physicians, sanitary engineers, and nurses among the various sources of supply from which services of these kinds are ordinarily obtained; and

Whereas the maintenance of the efficiency of the Federal, State, and local health agencies, to the end that the health of the people may be conserved and promoted, is a necessary and important element in the war program: Be it

*Resolved*, That a committee of five be appointed by the chairman to confer with the committee on sanitary policy under war conditions of the Conference of State and Provincial Boards of Health of North America, and that this be made a special order of business at 2.30 p. m., June 5.

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### DEVELOPMENT OF COUNTY HEALTH WORK.<sup>1</sup>

By K. E. MILLER, Assistant Surgeon, United States Public Health Service.

A discussion of county health work must be somewhat specific if it is to be intelligible, because the 3,000 counties of the United States vary widely in size, population, altitude, climate, wealth, and pursuits. Since we are met here as health officers of North Carolina, this discussion, although quite applicable to county health work in general, will endeavor to adapt itself particularly to the average county of this State. This county will be about 600 square miles in size, will have a population of about 30,000, with a notable proportion of negroes, will be economically prosperous but not rich, and will be distinctly rural.

In attacking the county health problem a sharp distinction between rural and municipal conditions must be drawn. In a city of 30,000 population the area covered is perhaps from 10 to 15 square miles, whereas the area may be 600 square miles in a county of similar population. While disease incidence in rural districts is lessened somewhat by the comparative lack of personal contact, the administrative difficulties are multiplied enormously by the area over which the health officer must work, the bad or impassable roads during certain months of the year, the lack of sanitary inspectors, policemen, and nurses, and the fact that rural people are not so accustomed to rules and regulations and are therefore harder to control. Thus, rural health administration requires special training. While I do not wish to discount the value of the special instruction for health officers given by the medical schools, I do wish to say that not one of the courses is conducted from the standpoint of rural needs and con-

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<sup>1</sup> Read before the meeting of the North Carolina Health Officers' Association, Pinehurst, N. C., April 15, 1918.

ditions and that, therefore, the student is not fitted for rural health work. Nowhere is the man himself so important as in rural health work. In comparison, the personality of the municipal official is insignificant, since he is fortified by a routine system which keeps him more or less behind the scenes.

The first problem in county health work is that of funds. Inasmuch as the whole program hinges upon this factor, it is deserving of special consideration. Probably no county has a surplus above current expenditures. It is the universal belief of the citizen that he is paying all the taxes he can stand, an impression neither always true nor always false. As regards expenditures for health protection, there are, obviously, limits beyond which we would not be justified in going, especially in view of the fact that there is no such thing as absolute protection of health. On the other hand, there is a minimum below which organized and efficient health work in a county can not be undertaken, this minimum being about \$3,000 a year, or in a county of 30,000 population, 10 cents per capita. That this is not excessive is shown by the fact that certain purely rural counties are now exceeding this amount and are proud of their investment. Indeed, if the money now spent in most counties in the old haphazard way in the absence of an adequate health machine were applied to the conduct of a business-like health department, the increase necessary to reach 10 cents per capita would be surprisingly small.

Two thousand of the three thousand dollars above mentioned should be set aside for the salary of the health officer, and the remainder for running expenses.

In order to attempt effective health work certain other minimal requirements must be provided for, as follows:

1. Equipment. (a) Automobile, bought and operated by county money. (b) Stationery and office furniture. (c) By all means an adequate system of preserving records. This is one of the weakest points in county health establishments generally. (d) Office help. Under the above budget not much can be invested in this way, but it is very essential to have some one, if only a child, always in the office to answer telephone calls and to keep the simple but necessary records.

2. A well-trained medical man who has the instinct for work and the personality and judgment suitable for accomplishing the desired ends. The idea of making health officers out of nonmedical men has gained popularity in some quarters, but in county health work there are many reasons making this even more of a mistake than elsewhere. In any case, the health officer must be a full-time man.

Starting with the foregoing minimal requirements, other facilities may be added *ad infinitum*. Roughly speaking, a county can get as much health protection as it is able and willing to pay for. For the average county these minimal requirements are about all that can be expected at first. The health officer should recognize the limitations of his position, and be prepared to sacrifice cheerfully the less important activities for the more important, so that his full capacities may be applied at the strategic points. One of the favorite fetishes which die so hard is, for instance, a laboratory. Unless the one-man health officer divorces himself from the idea early, he will waste precious time and good money, providing always that such good services are obtainable from the State laboratory as we now enjoy. Many recent developments in public health work, such as measures to meet the venereal problem, prenatal care, welfare work of various kinds, eugenics, and life extension work, are very attractive, but can not be actively incorporated into the early stages of rural health work.

As regards contagious diseases, the rural health officer has no choice. These constitute emergencies and he must attend to them as they arise. In connection with them he finds a duty in the performance of which he must be tireless—the training of his people in the prompt reporting of diseases. This will require time, patience, sometimes the pressure of law, and every atom of the health officer's ingenuity. The many devices which may be employed to secure more complete reporting can not be discussed here for lack of time. Suffice it to say that if the health officer secures good reporting the remainder of contagious-disease control becomes practically automatic. The practice of quarantining by registered mail is looked upon as particularly well adapted to rural needs, but it should not be employed as a routine measure.

All health establishments in their infancy will find themselves confronted with almost universally dangerous filth-disposal systems, or lack of any at all, in the home. No real progress can be made toward control of filth-borne diseases, therefore, until these insanitary practices are supplanted by sanitary measures. This may not be accomplished completely until the millennium, but much can be done. It has been found in the extensive rural sanitation work done by the United States Public Health Service during the past three years that better returns from small amounts of sanitary reform are secured than are really deserved. A very notable drop in the typhoid-fever rate has invariably followed the rural sanitation campaigns, even when the actual numbers of sanitary privies constructed bore but a small ratio to the total. It is fortunate that labors in this field are so rewarded, because the business is sordid and unattractive and health officers might persuade themselves to neglect it if the fruits

were not so unmistakable. The health officer must plan to devote the major portion of his energies to this problem, especially during the summer months.

As to malaria, this is a disease of sectional prevalence, but in the average southern county there are most likely to be localities where the damage wrought by it is very extensive, the disease ranking very close to the white plague itself as a menace to human health, welfare, and life. Although malaria is one of the diseases capable of complete eradication, the best method to be used, namely, drainage, is unfortunately far too expensive to be undertaken on a comprehensive scale in many rural districts, unless the results at the same time contribute some adequate economic benefit, such as the reclaiming of waste land, or rendering more productive that already in cultivation. Consequently the cooperation of the health officer with the agricultural agencies in the extension of cultivation projects will furnish a sound basis for antimalaria work by the one-man health officer. For more immediate results the routine administration of quinine should be adopted as a policy and given persistent publicity.

It is quite within the power of a one-man health officer, also, to obtain a good general anopheline survey of his county by means of sampling collections of water wherever he may happen to be in the county. Having once determined the principal foci of infection, a limited amount of intensive antimalaria work will be found possible and of most value as a demonstration. Even the one-man health force is able to do this effectively by selecting a small unit, such as one school district, and making a house-to-house canvass of it, teaching the people what to do and how to do it and urging their faithfulness in pursuing the course prescribed.

During the fall and winter months the health officer has work which compares favorably with the foregoing in importance. This is the physical examination of school children, together with some system of follow-up work.

Two other basic problems, tuberculosis and infant welfare, are unfortunately beyond the direct reach of the one-man health officer, although it is possible and essential for him to stress these subjects in an educational way from every possible angle.

The foundation of all rural health work, of course, must be education. In the large cities methods of compulsion may be tolerated, but not so in county work. It does not come within the province of this article, however, to discuss the various aspects which educational work may assume. No method or practice which will accomplish the desired end can be disregarded.

A characteristic mistake in trying to develop county health work is to attempt to get results by an overabundance of new rules and

laws, on the theory that, even if only 10 per cent of the laws are enforced, more will be accomplished with many laws than with few. This practice tends rather to disorganize than to develop health work. Good health legislation should be such that its effect should be its own recommendation. No laws should be passed except those capable of from 90 to 100 per cent enforcement with the machinery the health officer has at hand. A few reasonable laws which can be made to mean just what they say will inculcate in the people the habit of observing health laws. These will then serve as a nucleus around which other laws may be developed.

When an engineer lays out a drainage system he so executes the plans that the smallest branches bear a definite relation to the main collecting channel. In the scheme of health administration we find a close parallel, in which the county organization represents the smallest branches or indivisible units and the State and Federal organizations, respectively, the larger ones. Each has its own separate functions to perform, but can not operate successfully independently of the others. While this fact is so simple that its statement seems a mere platitude, a glaring disregard of it is sometimes seen.

When the turmoil of war subsides, we may confidently look for a great impetus to internal development in this country. Unquestionably, health matters will receive greater recognition than ever before. We may therefore conceive of the time, not far distant, when funds may be available for a cooperative health program in which county, State, and Federal Governments will all share. Such a scheme would necessarily bring about a close coordination of policy in the different units and wipe out all barriers to interdependent cooperation now existing. But whether this plan is ever realized or not, the wise health officer, in developing the work of a county, will go about his task with the idea that the health forces of our country constitute an organic whole, of which the county organization is an inseparable unit.